

RHIC/Injector Controls Overview

John Morris June 2005

New for FY05

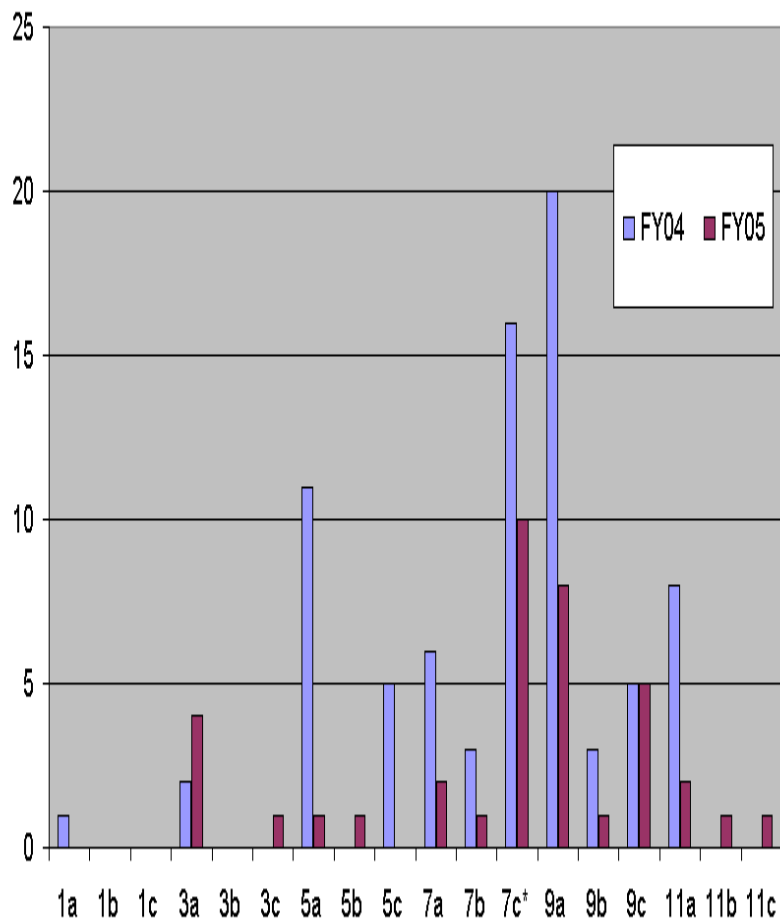
- Inhibit low intensity shots
- Accumulated Loss Monitoring
- RhicInjection – AGS Main Magnet correction
- LogView - new 3d plots, calculations, etc.
- Fill Data Analysis Database & FDAView
- Polarization Measurement Application
- Coupling Correction Application
- Automated QLI Analysis

Reliability Initiatives for FY05

Were they effective?

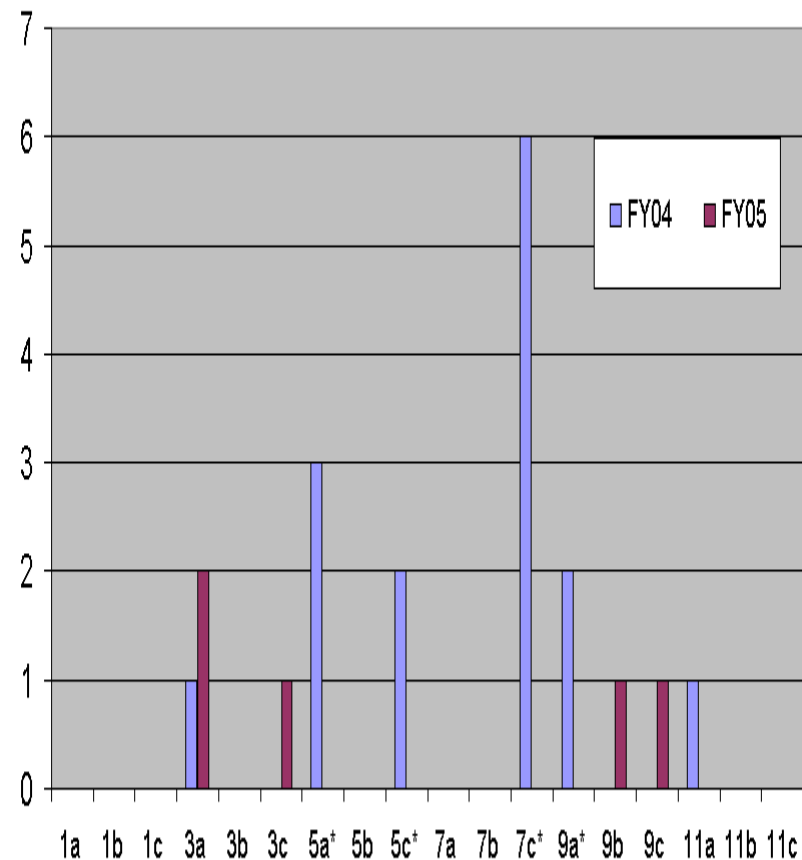
1. 6b permit: Fixed late FY04, no problems
2. AGS controllers: gauss generators, tune/chrom, auxrf successfully replaced
3. File servers: New op file server improved performance/reliability but some problems
4. Radiation effects in alcoves: Mixed results
 - New chassis in problem areas: *Excellent*
 - ECM for WFGs: *Not the answer*

FEC Resets For WFG Upsets



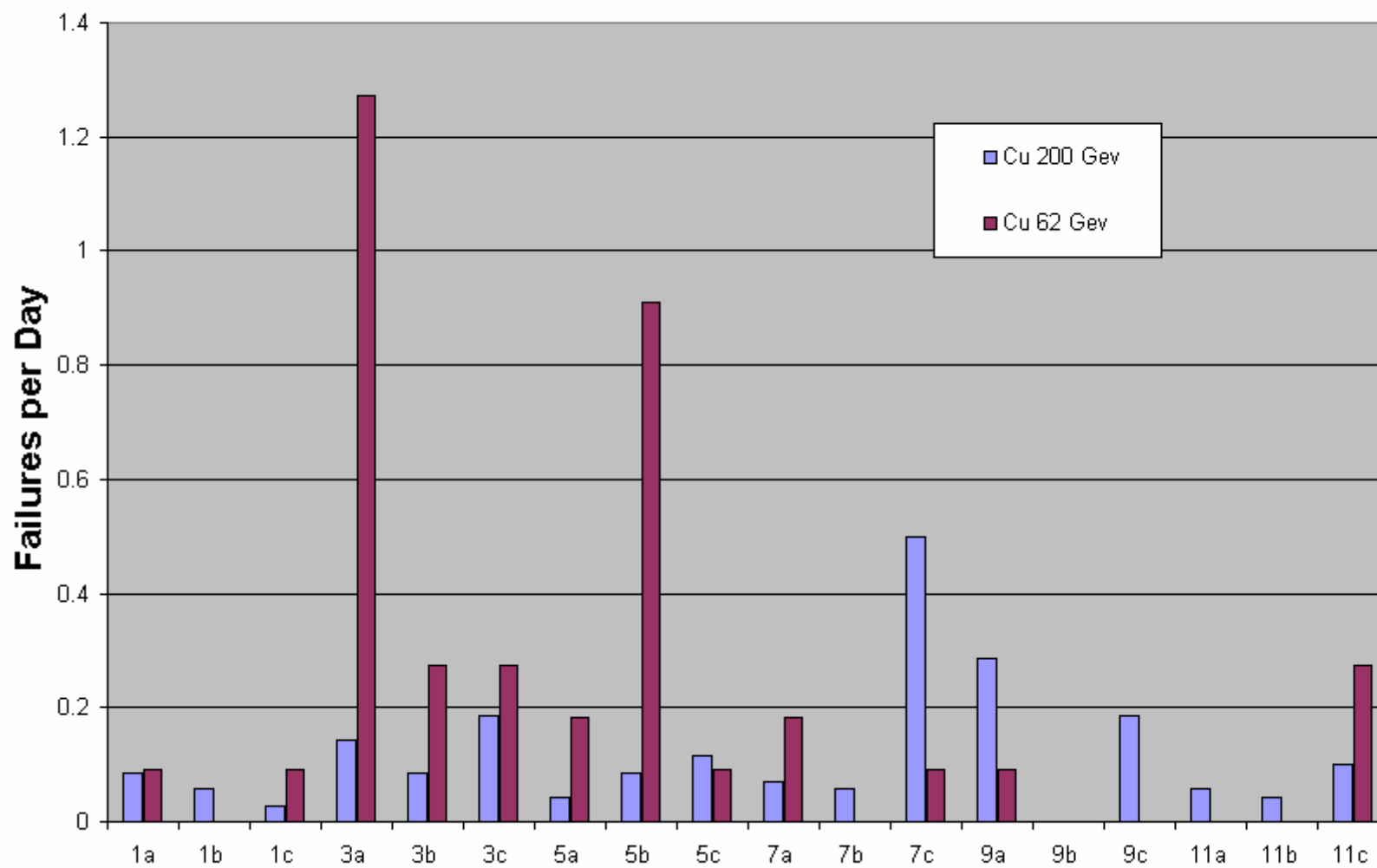
Alcove

FEC Chassis Power Supply Failures

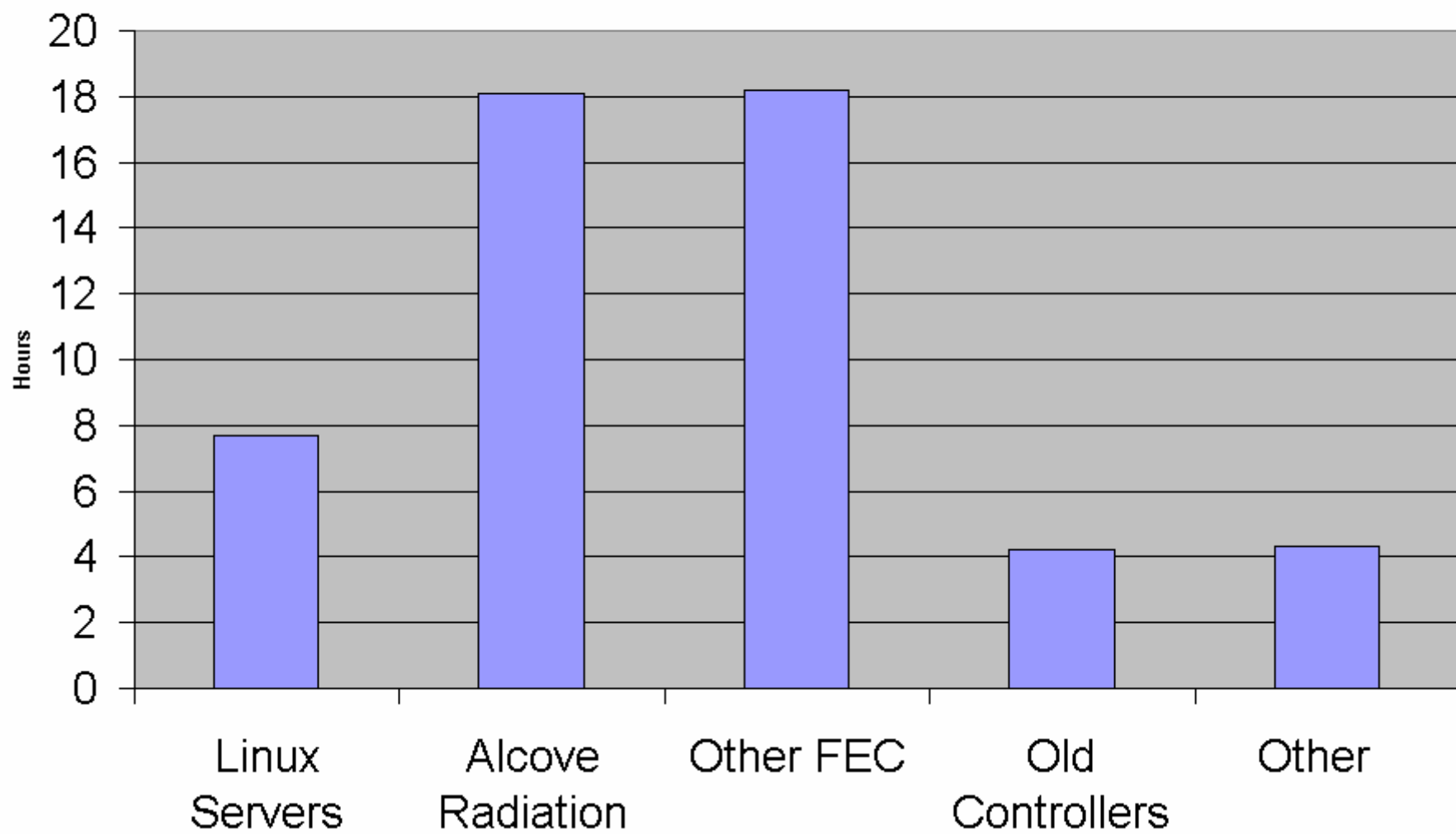


Alcove

Controls Equipment Failures in Alcoves - All Types



Controls Downtime - Failures of 1 Hour or More



Infrastructure Upgrades for FY05

- New database servers to improve performance & reliability: 100% success
- Mysql db server for elog (*Todd,Ila*): success
- New Linux servers, move server procs to Linux: large increase in processing power, ase in processing power, mainly successful



Problems with Linux Red Hat Enterprise WS

- Machines hang/crash : need to be rebooted
 - Improved with OS kernel updates, still some problems
- Servers hang during reboot
 - Developed our own workaround (“ip firewall”)
- NFS automount problems
 - Using patched autofs versions, not released yet
- Window manager / X server problems
- Rpc message problems

Preparing for FY06

- Fix/workaround Linux Enterprise problems
- Introduce clustering of servers
- FECs: Investigate VxWorks 6.0 and MVME3100 cpu boards
- Conduct disaster recovery tests
- Make the BLAM system more reliable

New for FY06:

AGS/Booster Controller Replacements

- AGS Main Magnet
- Supercycle Generator
- Real Time Generators
- BTA & LTB Instrumentation
- Booster Datacon PS (LTB/BTA/Dump)
- Booster & AGS Synthetic Gauss
- Booster Tune/Chrom (*All QFGs*)

New Functionality in AGS for Cold Snake Controls

- AGS Post Mortem
 - AGS Beam on Demand
 - Logging on Demand
-

*New AGS Controls provide increased ability to do logging, watching, and comparing in AGS and Booster. Maybe an **agspscompare**?*

Could make AGS/Booster operations more reproducible and reliable.

New for FY06:

Set History Database

- Saves a database record for each set made to the control system
 - Information saved -> device/property name, value, timestamp, user, machine, application
- Commissioned this year with many apps - pet, tape, adolf, others
- Fully operational in fall 2005

Set History Browser

Browser of Controls Set History Data - Mozilla

File Edit View Go Bookmarks Tools Window Help

http://www.cadops.bnl.gov/Controls/apps/sethistory/viewssethistory.php?DEVNAME= Search

Home Bookmarks Finance Mac Stuff Java Google BNLGoogle

History of RHIC/AGS Control Device Settings

Diagnostic Plot Generic Browser

Device Name: BIJ.KDHC7.STAT Property: commands

ppm User: 4 ☐ Show settings where login is not MCR

Show Data In Last: 0.1 Hours (Leave this blank if use time range below)

or Show Data between: 06/13/05 10:44 and 06/13/05 10:50

Clear Reset Display

Back To Start Point [Records 1-14 of 14]

No.	Device Name	Property	Time	Value	Login	Application	Machine
1	BIJ.KDHC7.STAT	commands	06/13/05 10:48:21	[ON]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
2	BIJ.KDHC7.STAT	commands	06/13/05 10:47:04	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
3	BIJ.KDHC7.STAT	commands	06/13/05 10:45:11	[ON]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
4	BIJ.KDHC7.STAT	commands	06/13/05 10:45:09	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
5	BIJ.KDHC7.STAT	commands	06/13/05 10:45:07	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
6	BIJ.KDHC7.STAT	commands	06/13/05 10:45:06	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
7	BIJ.KDHC7.STAT	commands	06/13/05 10:45:02	[ON]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
8	BIJ.KDHC7.STAT	commands	06/13/05 10:45:01	[ON]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
9	BIJ.KDHC7.STAT	commands	06/13/05 10:44:55	[ON]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
10	BIJ.KDHC7.STAT	commands	06/13/05 10:44:54	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
11	BIJ.KDHC7.STAT	commands	06/13/05 10:44:54	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
12	BIJ.KDHC7.STAT	commands	06/13/05 10:44:53	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
13	BIJ.KDHC7.STAT	commands	06/13/05 10:44:41	[ON]	mcr	/cfs/x/master/X86/bin/pet	acnlin44
14	BIJ.KDHC7.STAT	commands	06/13/05 10:44:40	[STA]	mcr	/cfs/x/master/X86/bin/pet	acnlin44

Back To Start Point [Records 1-14 of 14]